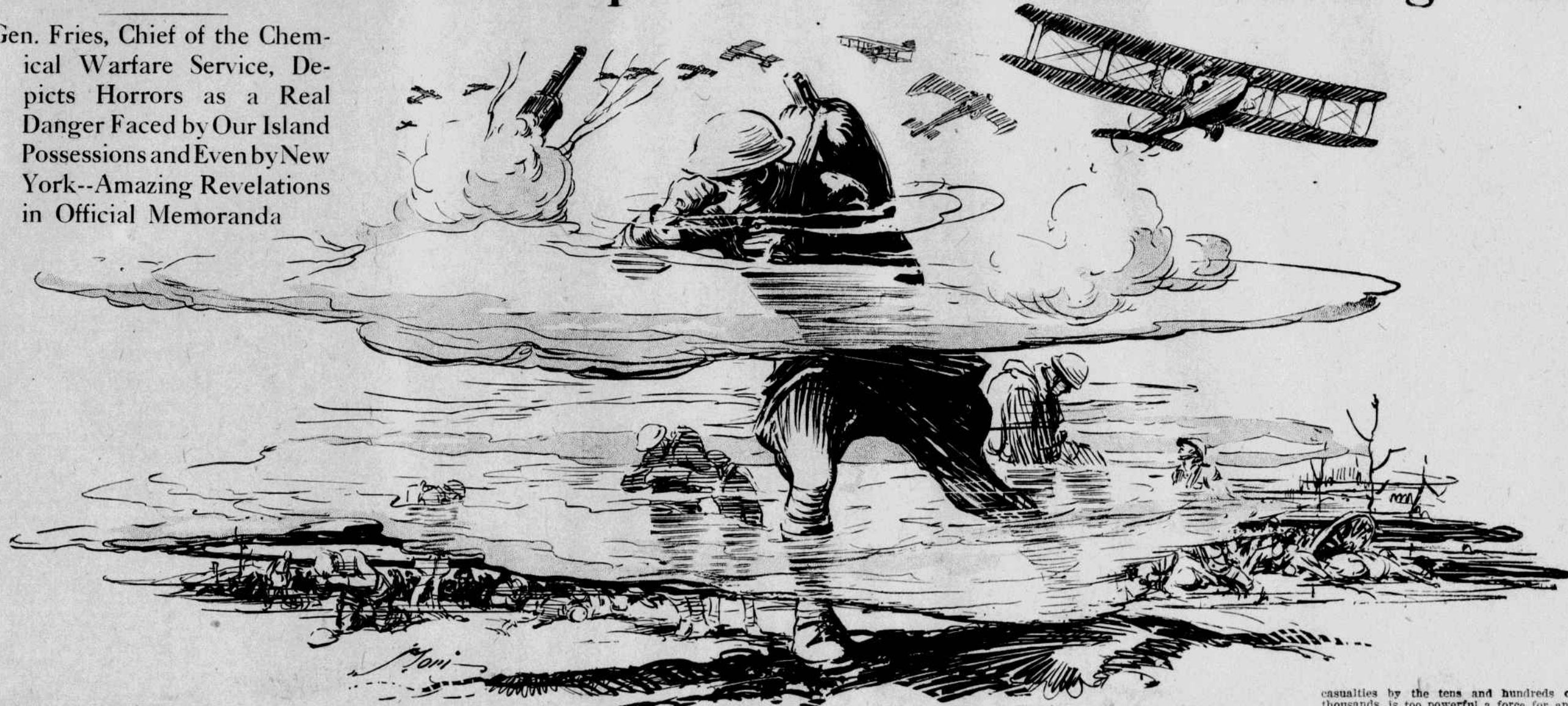


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WORLD MASTERY LIES IN "DEW OF DEATH"

Poison Gas From Airplanes Will Decide Next Big War

Gen. Fries, Chief of the Chemical Warfare Service, Depicts Horrors as a Real Danger Faced by Our Island Possessions and Even by New York--Amazing Revelations in Official Memoranda



HORRORS of the Great War reached their climax with the use of poison gas projected far behind the front lines by means of gas filled shells. Yet terrible though the results were both for the fighting forces and civil population, they pale into insignificance beside the picture of the gas war of the future painted in the accompanying article.

The facts about armament plans of the several nations gathered by THE NEW YORK HERALD and presented in these columns from time to time have attracted nationwide attention. The details presented to-day—all from official sources—are sure to gain international attention. No such frank revelation of the possible use of poison gas dropped broadcast by fleets of airplanes ever has been published and the description of the probable results staggers the imagination. Literally, as the writer says: "The mastery of the world rests in the Dew of Death."

By EDWIN C. HILL.

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HURRICANES of steel smashed German power on land and sea. The dew of death will paralyze and destroy the lunging battalions of a future assault against civilization.

The last war ended with diapason closing full, great guns roaring from the North Sea to the Alps, the ears of the warriors dinned by infernal tumult. The next war will close in the silence of death, broken only by the moaning and the screams of the blinded and the burned.

Wars of the past have been conflicts of artillerymen and engineers, clumsy duels with clumsy tools not very different from the tools used by Napoleon, Grant and Von Moltke. Wars of the future will be unimaginably dreadful struggles, directed by middle-aged and elderly persons in spectacles sitting in laboratories and looting upon fields of battle, battle fleets and great helpless cities miasmas of death that not only destroy the body but wreck the mind through fear, sheer terror of the mysterious, the unknown.

Compounds of volatile, lethal poisons, poisons that will fall as dew from the clouds, literally a dew of death; poisons that will be drifted across great spaces like fever muck from a swamp; poisons that will be discharged in shells from pneumatic guns, furtively, silently, will contend for the mastery of the world. These will be chemists' wars, if wars must come again, and the simple truth is that the mind of man is not yet able to picture the horrors that will be released.

Dreadful Forecast of Evils By New War Destroyers

Great cities, an ocean apart from their country's enemy and tranquil in fancied security, far out of reach of the longest range gun, will stir from sleep in the night to the agony of their people, as from unseen poison ships, circling above them in the dark, dews of death fall to blind and burn and paralyze. Fortresses, manned by the most powerful ordnance man has been able to perfect, will lie helpless under this gentle, frightful rain. Armies with banners will be levelled to the dust, no longer armies,

but masses of sightless, pain-crazed human beings, incapable of motion, incapable of thought.

In all the thousands of years that men have schemed to slay other men for greed, ambition or the love of women nothing even remotely so terrible has come into warfare as the discovery and coldly scientific application of poison gases as a weapon. The possibilities are absolutely limitless. There are 200,000 chemicals known to man and as yet only five per cent. of this vast number have been used for experimentation. Yet with the few discoveries made in the five per cent. and employed in the Great War the casualties were terrific.

The Surgeon-General of the United States Army reports that almost one man out of every three that entered the hospitals of the American Expeditionary Force as a battle casualty was suffering from enemy gas. Including the Marines and attached naval personnel poison gas caused 72,056 casualties, of which 1,271 proved fatal. That is what the dew of death did to American fighting men. What it did to the French and the British can be imagined without statistics.

Yet from 1915, when the Germans first drifted a poison cloud across the field of Ypres until they surrendered more than three years later, they developed only three per cent. efficiency. Had it been fifty per cent. so early in the struggle, or even later, history might have had another tale to tell. "Had they got up to fifty per cent.," said Brigadier-General Amos A. Fries, Chief of Chemical Warfare Service, U. S. A., "we would have had to come home—those of us left."

In Its Infancy During Late War—Now a Menace

At Ypres in 1915 when the Kaiser's hosts added the new terror to warfare they had the world in their hands had they followed up the shocking surprise their poison waves sent through the British and the Canadians—but they did not follow it up. One is reminded of Victor Hugo's explanation of French defeat at Waterloo—the sunken road of Ohain, Napoleon's strange indecision, Grouchy's blunder. Hugo put it in a word: "God."

Nor did the Germans advance their primary advantage with the energy that had marked them in all other fields of military achievement and purpose. The German chemical shell programme was 25 per

cent. of their artillery ammunition. During the entire time that the American troops were in action it is doubtful that the chemical shell firing ever exceeded 15 per cent. They could not manufacture chemicals fast enough. In the battle of the Meuse-Argonne, the longest and hardest-fought battle the American troops participated in, the Germans used a relatively small amount of gas. Their available supply had been dissipated in other sectors and little was left to employ against the Americans. But with poor efficiency and a dwindling supply it must not be forgotten that German poison gas struck out of the battle line one in every three of the American fighting men who went to hospital.

Does any one think that the vision of whole cities thrown into helpless agony by invisible airships dripping poison is too fantastic? Or that it would be impossible to subdue such fortresses as Corregidor or the green terraced ramparts that guard the Narrows of New York Bay? Nevertheless that is the cool and carefully weighed opinion of General Fries and of his aids in the Chemical Warfare Service. They approach these amazing conclusions with knowledge of secrets that are not accessible to the rest of us, grim and dreadful mysteries that have been worked out in the great Chemical Warfare Service laboratories at Edgewood, Md., and in the many private laboratories whose science is given to the United States Government.

If the Philippines are ever attacked by an enemy it will be a gas attack, General Fries believes, and the measure of his opinion is indicated in the following interesting memorandum he sent a few days ago to Major-General Leonard Wood, who is now on his way to our Far Eastern possessions. Here it is:

Forecast of Loss of Philippines By Gas Released by Enemy

"Japs Can Take Philippine Islands with Gas—Let us assume Japan has decided to make war upon the United States. Her first objective is the Philippine Islands. They lie to the south of Japan and more or less parallel to the Asiatic coast, as is Japan herself farther north. American troops and fortifications are concentrated on the island of Corregidor, at the mouth of Manila Bay. This is the usual tropical island, with an extreme length of seven miles and an extreme width of one mile, the total area being less than three square miles. It is rather a typical promontory on the west, gradually shading off to almost sea level on the east. It has the usual tropical growth, with cleared places for barracks, officers' quarters and gun emplacements.

"Japan, having decided on war, will seize a small bay within 100 miles of Corregidor. Her air force will fly there by way of Formosa and land in the little harbor picked out. She will carry in her fleet 100 tons of mustard gas. This gas and the methods of making it were thoroughly worked out by the different Allies in the World War. Hence Japan's knowledge of the gas and of manufacturing it are complete.

"A force of fifty planes, each carrying one ton of mustard gas in a simple tank, will leave at night for Corregidor. A half-hour later they will be over the island and will be sprinkling it thoroughly with mustard gas from one end to the other. Fifty tons of mustard gas, even if half of it is wasted on the surrounding waters, will form a deadly concentration that cannot be gotten rid of under five to ten days. Men cannot live anywhere on the island without wear-

ing masks and oil clothing which is gas proof.

"Within forty-eight hours the place will be practically untenable for anybody. Animals and all human beings will begin to grow sick from injury to the lungs or from very bad burns. Forty-eight hours alone will suffice for a reduction of the island without firing a shot. Thus will pass the Philippine Islands into the hands of the Japanese.

"The next step will be just to hold the Philippine Islands and wait for results. They might possibly attempt to apply the same methods of attack against the Hawaiian Islands. It is perfectly certain that the attack would be just as successful against the Hawaiian Islands as against the Philippines, unless the Americans have a superior air force that can keep the invaders away.

"The Caroline and Marshall Islands, including the island of Yap, over which the Japanese are to have a mandate, would afford numerous small harbors which would be ideal landing places for aeroplanes.

"In addition to an air force, the Americans must have a sufficient fleet within striking distance of the Hawaiian Islands to prevent the Japanese from seizing one of those islands as an air base. If not, the Japanese can seize a small island with a landing place for their aeroplanes, and with a fleet of aircraft they could force the evacuation of the American forts in Hawaii by sprinkling gas, just as in the case of Corregidor.

"This is merely an outline of the method of attack. How incomparably more simple is this seizing of Corregidor when compared with its seizure by any other means. And this is no dream. Any one who knows mustard gas knows that if about ten tons per square mile be sprinkled over an area inhabitants cannot exist there until after three days under the best of conditions. Generally the time will be from five to ten days in the tropics. The question of defence against such an attack is practically impossible without a superior air force.

"From this point of view it is not seen how America can hold the Philippine Islands. This is for the reason that it is not seen how the United States can maintain in those islands an air force greater than Japan could probably bring against it. The situation at Hawaii differs somewhat, but if we are to hold the Hawaiian Islands we must combine a large navy with an air force which will be sufficient to keep Japan from seizing any of the islands as an air base."

General Fries Describes Possibility as a Very Real Danger

"In preparing this extraordinarily frank memorandum, Gen. Fries 'got right down to brass tacks,' as he says, believing that no good would be served by minimizing a very real danger. And the same danger would apply, in his opinion, to any part of the United States whatever in wartime if the navy was not big enough and the air force not numerous enough to keep an enemy from establishing a base for poison gas raids.

"Take New York city itself," said the General. "New York city is magnificent. For the sake of argument, let us assume that the United States navy, allowed to deteriorate, had suffered defeat or that the Atlantic fleet had been outmaneuvered by a cunning foe. Let us assume that the same neglect of military aviation continues. What then? The answer is as certain as that night follows day. Airplanes are be-

ing developed so that even now it would be possible for great squadrons to leap the Atlantic and sprinkle our cities with burning poison. If an enemy nation could seize and hold a base in the Caribbean we would be wide open to the most frightful bombardment mind of man ever conceived—not a deluge of shot and shell but a rain of something infinitely more dreadful.

"We know that ten tons of mustard gas will desolate a square mile and make life impossible in that square mile. Suppose a fleet of 100 poison sprinklers swooped over New York in the night, having defeated or evaded the American flying fleet. Death, desolation and defeat would most certainly result. In the millions of the great city hundreds of thousands would be blinded, burned horribly, driven insane from terror. It is not a picture one cares to contemplate, even in speculation, but I tell you that the scientific use of gas in warfare is approaching this extreme of horror.

"The American people should know that these possibilities exist, that the peril is not a nightmare of military men, but a cold, scientific fact, well enough proved in the past war and infinitely more potent now. We have adopted a policy of the utmost frankness because we believe in the sound judgment of the American people. We have our secrets, but we do not believe in trying to keep too many matters secret. Too much secrecy often defeats the very purpose of secrecy. We believe in being frank to ourselves. We believe in being frank to our comrades in the army and navy, to Congress and to the people as a whole. We believe in publicity, because we don't see how the army and navy, or any of the other institutions of our republic, can be properly supported unless the majority of the people have a correct understanding of what those institutions are and how they should be maintained.

Battlefields of the Future Never to Be Free From Gas

"Poisonous gases in the past war caused 27.3 per cent. of all American casualties, killed and wounded. Considering only the wounded admitted to hospitals, over 31 per cent. were gas alone, and yet the use of gas, even at the end of the World War, was a child's game compared to what it will be in the future. With gas drifting from clouds let loose on the battle line, with gas being thrown to enormous distances by all calibres of guns, and with gas raining from aeroplanes or bursting from airplane bombs, the battlefields of the future will never be free from gas.

"This is no exaggeration. We have the raw materials for these gases. We have the personnel to manufacture them. We have the factories. More than that, we have the men in the army and the navy and the air service that will distribute them, and the military man who fails in the future to consider gas in every problem he studies is failing to consider the most powerful weapon of war, both for offence and defence.

"There is still talk in places that chemical warfare may be abolished by agreement. It can't be done. If you can abolish chemical warfare by agreement you can abolish all war by agreement. It may be argued that we have agreements that have been kept, such as not to use poison bullets or not to poison wells. Such agreements have been kept for one reason and one reason only. The methods are inefficient. Poisoning of wells is a species of guerrilla warfare comparable with stabbing a man in the back and gets only an occasional casualty. But chemical warfare, getting its

casualties by the tens and hundreds of thousands, is too powerful a force, for any military commander to overlook either for offence or defence, and too powerful for any nation to dare trust that no other nation will use it in war. History proves that no powerful method of making war has ever been abandoned until a more powerful method was devised. And why shouldn't we use poison gas? It is just as sportsmanlike to fight with gas as it is to fight with rifles or swords. Gas, being so universally adaptable, requires the highest intelligence and the keenest minds to use it successfully. We Americans believe we have the mind, the skill and the ingenuity to use it just a little better than any one else.

"A recent writer in a military magazine stated that gas would probably not be used in our barrage during an attack, because of the difficulty it might cause our own troops. He forgot the enemy, a dangerous lapse of memory for any military man. Battles have been lost and nations have been swept away because commanders of armies forgot to figure on what the enemy might do. Consider our own barrage behind which our troops are marching to battle with the wind blowing toward us. This is the most dangerous condition for our own use of gas. But what of the enemy? This is exactly the opening he is looking for. Under such conditions he will deluge our advancing soldiers with gas from the very moment they start until they cross his lines. If we do not deluge him in our barrage, we give him the use of the most powerful weapon of war, without any danger to himself. If the wind be blowing toward the enemy we will certainly deluge him, because our own gas cannot come back to us, and the enemy for that very reason will deluge our advancing infantry because he knows we will be deluging him.

"This simply means that gas will be used everywhere, in every battle, and we owe to the general and his staff who fail to prepare so to use it. No war can be fought without suffering casualties, for, as Napoleon said, 'To make an omelet you must break some eggs.' We recognized that fact when we drove our men so close to our high explosive and shrapnel barrages that we had many casualties from our own shells. Why did we do it? Simply to enable our men to get into the German trenches before the German machine gunners, hiding in deep dugouts, could man the trenches and mow our men down with machine gun fire at short range.

Chemical Warfare Is Cheap, But Germans Proved It Terrible

"Chemical warfare is a very economical method of waging war or maintaining peace. It is doubtful if 15 per cent. of the German shells fired at American troops contained gas, yet that 15 per cent. of gas shells alone accounted for almost 30 per cent. of all our casualties. The United States spent in the World War for gases, gas masks, gas plants and all other needs of the Chemical Warfare Service \$120,000,000, less than one-half of 1 per cent. of the cost of the war, and yet with that out-half of 1 per cent. more than 4,000,000 masks were shipped overseas, sufficient to equip the entire army in France and leave on hand at the signing of the armistice 1,000,000 masks in reserve. More than 3,600 tons of liquid gas were shipped to the British and the French and filled into shells by them. Several thousand tons of other chemical warfare supplies were shipped to France. A number of plants were built, among which is the great plant at Edge-

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